SONIC vital 2

Ultrasound Therapy Device

Art. No. 101524

Instruction Manual Art. No. 101475-V03

schwa·medico
MEDICAL EQUIPMENT

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General Information

Purpose
The SONIC vital 2 is intended for use by qualified therapists for low intensity, non-invasive, external pulsed ultrasound therapy on humans. The aim of treatment is to re-establish normal functioning of skin and muscle tissue, tendons and joints where this has been disrupted, and to reduce pain. The SONIC vital 2 is particularly well suited for use in orthopaedic, trauma and sports medicine. The SONIC vital 2 is furthermore suitable for use for sonophoresis for the same spectrum of indications as outlined above.

Classification
This product has been classified as a Class IIa device in compliance with the classification criteria of the Medical Device Directive 93/42/EC from 14th June 1993, Annex IX, Rule 9.

Precautions
- The SONIC vital 2 must only be used under observation of these operating instructions and of the medical contraindications.
- The device must only be used by qualified and medical persons trained in its use.
- Never use any adapters or extensions of any kind, since this can lead to an increase in emissions and a reduction of the SONIC vital 2's electromagnetic immunity.
- Damaged cables and plugs must be replaced immediately.
- The device must be returned to the manufacturer immediately for inspection in the event of any damage.
- Always disconnect the mains plug and all other cables before cleaning and servicing the device.
- All maintenance and inspection work must be performed by qualified and skilled persons trained in the functioning of the device, using suitable and properly calibrated measuring equipment.
- Never use in close proximity to flammable anaesthetics or gasses.
  Explosion hazard!
- Keep the device away from containers containing fluids. Never let the device come into contact with fluids. In the event that fluids have been able to enter the device, it must be thoroughly dried before the next use and subjected to a routine technical inspection.
- Check whether the mains voltage and frequency of your power network correspond to the specifications on the power pack before connecting the unit to the mains.
- Any non- or partial observance of these safety precautions is carried out at the user's risk.
- The unit must only be used in an ambient temperature of 10 °C to 40 °Cand a relative humidity of less than 90 %. If the unit is stored at a lower temperature, it must be allowed to reach ambient temperature before being turned on in order to avoid the formation of condensation. Do not use in damp rooms.

Safety instructions
All of the items listed under "Accessories" are suitable for use with the SONIC vital 2. Do not use any other accessories than listed in this chapter.
Operating the unit in close proximity (e.g. 1 m) to a short wave or microwave therapy unit may cause the output values of the SONIC vital 2 to fluctuate.

Please observe the following in order to avoid undesired effects during application:

- Use the lowest output setting possible for the respective treatment purpose the unit is being employed for.
- The interferences generated through the use of the SONIC vital 2 may impact the functioning of other electronic devices. Portable and mobile RF communication equipment may interfere with the functioning electronic medical devices. Please observe the commissioning instructions and the manufacturer's declarations in the accompanying documentation.
- The owner of the device is responsible for inspecting all accessories at regular intervals. The cables in particular must be inspected for potential damage to the insulation.
- Any failure of the SONIC vital 2 may result in an undesirable increase of output power.

Contraindications

- Serious cardiovascular diseases, in particular when treatment is aimed at areas with large autonomous nerves and nerve centres.
- Serious systemic diseases
- Malignant diseases
- Bacterial, viral and fungal infections in the treatment area
- Hypaesthesia in the treatment area and in patients with loss of autonomic function
- Patients with dementia
- Children under five years of age
- Ultrasound applied to active growth plates
- Ultrasound applied to female and male gonads and glandular tissue
- Pregnancy
- Ultrasound applied to the area around and to the eyes
- Implants, incl. all electronic implants (e.g. pace makers)
- Advanced circulatory disorders, with the exception of low intensity wound treatments
- Serious bleeding disorders, e.g. such as haemophilia and patients on anticoagulants
- Serious vascular damage and danger of bleeding
- Deep venous thrombosis
- Ultrasound applied in the area of the brain and spinal cord as well as major superficial nerves
- Unhealed fractures (with the exception of low intensity ultrasound) and stress fractures
- Around the pelvis during menstruation
- Osteoporosis
- Do not apply to face (1 MHz)
- Do not apply to heart if patient suffers from serious cardiac disease(s)

Contraindications relating to heat treatment

- Acute injuries
- Infections within the treatment area
- Thrombophlebitis

Contraindications relating to ultrasonophoresis

- Specific contraindications related to active ingredients and auxiliary substances

Possible side effects

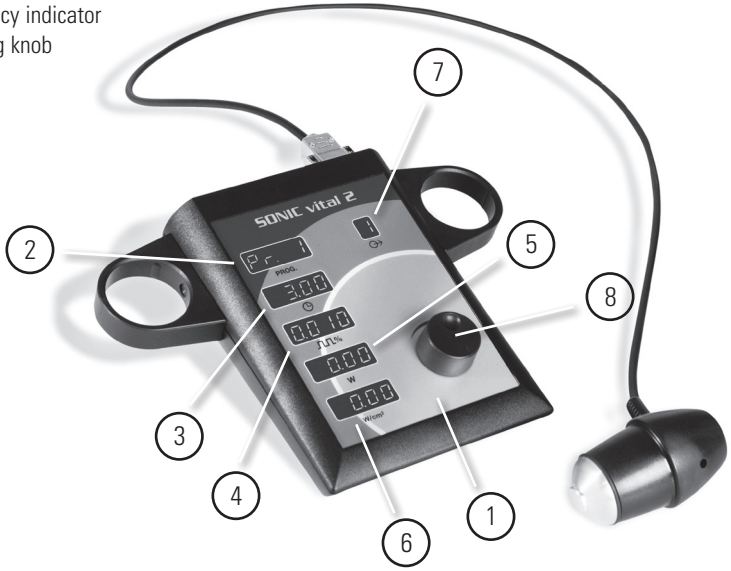
- Worsening of infections
- Increases in pain
- Wound healing complications
- Tissue trauma cause by incorrect application and overdose
- Reactions of the autonomous nervous system, such as circulatory disturbances
- Hemostasis caused by stationary waves in the event of insufficient transducer movement

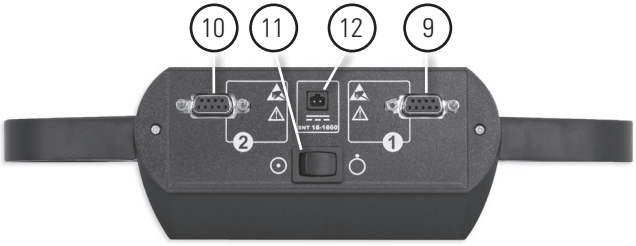
Side effects related to ultrasonophoresis

- Side effects related to specific active ingredients and auxiliary substances
- Skin irritation

Device Description

1. Front panel
2. Program number indicator
3. Therapy duration in min and sec
4. Duty cycle in %
5. Max. output in watt
6. Power density in watt / cm²
7. Frequency indicator
8. Rotating knob





9. Ultrasound transducer channel socket
10. 2nd ultrasound transducer socket
11. On/Off switch
12. Mains adapter socket

13. Mains adapter
14. Ultrasound transducer 1 MHz 4 cm²
15. Ultrasound transducer 3 MHz 1 cm²
16. Ultrasound gel 250 ml
17. Carry case

Using SONIC vital 2

Set up
Set up the unit on a smooth and level surface. Do not place the SONIC vital 2 next to or on top of other devices. SONIC vital 2 may interfere with other devices.
Connect the SONIC vital 2 with the mains circuit. The socket for the mains adapter is located on the rear side of the unit (no. 12). Make sure that the mains voltage and frequency of your power network correspond to the specifications of the mains adapter. Plug in the adapter into the power socket.
Connect the transducer probe(s) to the SONIC vital 2. The sockets are located on the rear side of the unit (no. 9 and 10). Only use original transducer probes from schwa-medico with the SONIC vital 2. When disconnecting a transducer probe, always pull the connector out of the socket by holding the connector housing. Do not pull on the cable! This might damage the transducer.

Important!
If no transducer probe has been connected, the display will show “no head” and the channel selection indicator will be “0” when trying to start the treatment. If the transducer(s) is/are properly connected, the LED on the transducer will light up permanently during the treatment. If the transducer(s) is/are not properly applied on the skin or if connecting gel is insufficient, the LED will start flashing and the intensity of the ultrasound will be reduced to a minimum (0.30 W). Never disconnect or change a transducer while treatment is in progress.

Turning ON the unit
Turn ON the SONIC vital 2 by activating the switch on the rear side of the unit (no. 11). The unit will perform a display test. It is then ready for operation and shows the last program in use.

Selecting a program
After turning ON the device the program no. is flashing. Select a program by turning the rotating knob. The program number increases if you turn it clockwise and decreases in the opposite direction. Confirm the chosen program by pressing the rotating knob. The transducer probe number is now flashing.

Selecting a transducer probe
Select a transducer probe by turning the rotating knob. The display shows 1 for the 1 MHz probe and 3 for the 3 MHz probe. Confirm the chosen transducer by pressing the rotating knob. All display indicator are now flashing for 2 seconds and the device is ready to start the treatment.
If one transducer only is connected to the device, the frequency of that transducer (1 or 3 MHz) is shown on the display. If two transducers are connected to the device, the active one is shown on the display. Please refer to the program list for more information on which transducer to use for each program.

Starting the treatment
The output intensity can be adjusted in steps of 0.10 W by turning the rotating knob in the clockwise direction. Turn the rotating knob in the opposite direction to reduce the intensity. The treatment starts as soon as the intensity is increased. The therapy duration is shown on the display and starts counting down. The intensity returns to zero when the therapy time is elapsed.

Display indication

W indicator	Maximum ultrasound output
W/cm² indicator	Effective ultrasound ouput over the treated area This indicator will change when adjusting the intensity.

Caution! Always apply sufficient ultrasound gel to the transducer before starting the treatment.
The transducer must be constantly in movement to prevent any builds-up of high intensity emissions on a localized area of the skin. If you do not move the transducer constantly it can cause burns.

Stopping the treatment
The device is stopping automatically when the therapy time is elapsed. Press the rotating knob during the treatment to stop the therapy.

Changing parameters
Turn ON the device. The program number is flashing. Select and confirm the program of your choice with the rotating knob. The transducer frequency is flashing. Select the transducer of your choice (1 or 3 MHz). Press and hold the rotating knob for 2 seconds while the transducer number is flashing. The display for the therapy time is flashing. Select the desired therapy time by turning the rotating knob. Confirm your choice by pressing the rotating knob. The display for the duty cycle is then flashing. Select the desired duty cycle by turning the rotating knob. Confirm your choice by pressing the rotating knob. You can then start the treatment by increasing the intensity with the rotating knob.
The changed parameters will not see saved if you turn OFF the device.

Saving own parameters
Turn ON the device. The program number is flashing. Select the program to be changed into a new program. Press and hold the rotating knob for 4 seconds. The program name **Pxx** is changing into the user program name **Uxx**. The transducer frequency is flashing. Select the transducer of your choice (1 or 3 MHz). Press the rotating knob for 2 seconds while the transducer number is flashing. The display for the therapy time is flashing. Select the desired therapy time by turning the rotating knob. Confirm your choice by pressing the rotating knob. The display for the duty cycle is then flashing. Select the desired duty cycle by turning the rotating knob. Confirm your choice by pressing the rotating knob. You can then start the treatment by increasing the intensity with the rotating knob.
The changed parameters are now saved into the user program with the name Uxx. User program can be selected in future therapies. They are to be found after the program no. P60.

Deleting user programs
Turn OFF the device. Press and hold the rotating knob. Turn ON the device while holding the rotating knob pressed. Release the rotating knob. Turn the rotating knob clockwise. The display for the program number shows “dEL” for delete. Confirm the deleting process by pressing the rotating knob. After a few seconds the display for the program number shows “dONE” and the device gets back to the regular therapy mode.

Symbols Used

Rear

Symbol denoting ESD sensitive unit components people may come in contact with

Caution, output with physiological effects

Mains adapter socket

Switch “On”

Switch “Off”

Type Label

Serial number

Article number

The maximum output parameters of the product follow this symbol.

Power supply

Attention: Read accompanying documents, especially user manual!

This equipment is marked with the recycling symbol. It means that at the end of the life of the equipment you must dispose of it separately at an appropriate collection point and not place it in the normal domestic unsorted waste stream. This will benefit the environment for all.

BF type application part. Protection against electric shock.

The year of construction of the product follows this symbol.

CE0482 By labelling with CE certificate, the manufacturer states that the product meets all active requirements of the regarding EU Directive. A conformation evaluation process has been successfully completed. The code number of the conformation evaluation process is given in accordance with the CE labelling of the involved notified body.

Technical Data

SONIC vital 2

Protection class	II
Applied parts	Type BF, 2 parts
Operating mode	Continuous operation
Dimensions	20 cm x 15 cm x 5 cm
Weight	2 kg (unit only)
Power supply	18 VDC
Current consumption	1.4 A
Duty cycle	0 – 50 % in 5 stages (10% increments), 100%
Maximum output	0 – 2 W /cm² & 3 W/ cm² in duty-cycle mode
Pulse frequency	100 Hz
Number of programs	60 pre-specified and 60 user programs
Duration of treatment	0 – 30 min or continuous

Mains adapter	**SNT 18-1660**
Nominal voltage	100 – 240 VAC
Nominal current	700 mA
Operating frequency	50/60 Hz
Output voltage	18 V
Output current	Max. 1.66 A

Transducer probe SVH1	
Acoustic operating frequency	1 MHz
Power spectrum	2 W/cm² and 3 W/cm² in duty-cycle mode
ERA	4 cm²
BNR	< 5.0
Bundle type	Collimating

Transducer probe SVH3	
Acoustic operating frequency	3 MHz
Power spectrum	2 W/cm² and 3 W/cm² in duty-cycle mode
ERA	1 cm²
BNR	< 5.0
Bundle type	Collimating

Safety Inspection

The manufacturer is only responsible for the safety and performance of the SONIC vital 2 when readjustments, alterations and repairs are carried out by authorised persons and when the SONIC vital 2 is used in accordance with the operating instructions. We recommend a technical check on the SONIC vital 2 every 12 months. This includes:

Visual inspection:

- Completeness of documentation (instruction manual)
- Completeness of equipment (see content delivery)
- Correctness and completeness of labeling:
  – Labels
  – Notices
  – Labeling on front panel
- Mechanical damage to the device

Testing functional capability:

- Control panel: Keys and displays
- Testing proper functioning in accordance with operating instructions

The device must be checked for mechanical damage and proper condition. All cables must be inspected for mechanical damage and for damage to the cable insulation.

Electrical safety testing according to VDE 0751-1 (STK)

- Substitute for device leakage current
- Substitute for patient leakage current

The current measured during the regular safety inspection must not be greater than 1.5x of the first current measured or the limit value as specified by VDE 0751-1.

- Measuring the output values

These technical checks may only be performed by suitably qualified persons. The results must be documented with the date an name of the person carrying out the check. Do not use SONIC vital 2 if it has been damaged or if it does not work properly.

Inspection of the transducer probes

We recommend to check the function of the transducer every month. Please pay particular attention to potential damage such as cracks: fluids should not enter the transducer. The insulation of the leads must also be checked for damages. All connection plug pins must be present and intact. The SONIC vital 2 should not be operated if the transducer, the leads or connections is damaged.

Maintenance and Cleaning

The SONIC vital 2 must be cleaned at regular intervals. Use a soft, lint-free cloth and, if required, the smallest amount of cleaning agent or isopropanol possible. Do not use any cleaning agents with abrasive additives. Always make sure that no fluids are able to enter the interior of the unit when cleaning. Flammable cleaning agents must have been allowed to fully evaporate before operating the device again. Always disconnect the unit from the mains adapter by pulling out the plug before cleaning. The transducers must only be cleaned using a slightly dampened cloth.

Warranty

We guarantee the SONIC vital 2, the transducers and the mains adapter for 1 year from the date of purchase.

We do not guarantee the proper functioning of the product:

- If the operating instructions are not observed
- If the device is operated incorrectly
- If the device is used or handled improperly
- In the event of unauthorised third-party interference with the device for repair-purposes
- In the event of force majeure, such as a stroke of lightning
- Transport damage caused as a result of improper packaging when returning the item
- Non-observance of maintenance and/or safety inspection requirements
- Operational wear and tear and normal wear.

The manufacturer does not accept liability for consequential damage unless caused intentionally, through gross negligence or related to injury to life or limb due to ordinary negligence.
It furthermore does not accept any liability for any incorrect interpretations of the operating instructions nor incorrect diagnoses.
This does not affect any statutory warranty claims.

Disposal

The manufacturer undertakes to accept the SONIC vital 2 for disposal and dispose of it in accordance with the regulations.

Delivery Content

Quantity	REF	Designation
1	101524	SONIC vital 2
1	106329	Mains adapter, SNT 18-1660
1	106327	Ultrasound transducer 1 MHz SVH 1
1	101475	Operating instructions
1	104749	Ultrasound gel (250 ml)
1		Carry case with padding

Accessories

The following accessories are approved for use with the SONIC vital 2:

REF	Designation	Type
106329	Mains adapter 18 V/30 W	SNT 18-1660
106327	Ultrasound transducer 1 MHz	SVH 1
106328	Ultrasound transducer 3 MHz	SVH 3
104749	Ultrasound gel	250 ml
104752	Ultrasound gel	1 l
104753	Ultrasound gel	5 l

Manufacturer Declarations

Guidelines and manufacturer declaration – Electromagnetic emissions

The SONIC vital 2 is intended for operation in an environment as specified below. The owner or person using the SONIC vital 2 must ensure that the unit is operated in such an environment only.

Immunity testing	Conformity	Electromagnetic environment - Guideline
RF emissions in accordance with CISPR 11	Group 1	The SONIC vital 2 only uses RF energy for its internal functions. This means that it's RF emissions are extremely low and makes it highly improbable that it should interfere with neighbouring electronic devices.
RF emissions in accordance with CISPR 11	Class B	The SONIC vital 2 is suitable for use in all kinds of facilities, including residential ones and those directly connected to a public power supply network that is also used to supply residential buildings.
Harmonic oscillation emissions in accordance with IEC 61000-3-2	Class A	
Voltage fluctuation/ flicker in accordance with IEC 61000-3-3	Conforms	

Guidelines and manufacturer declaration – Electromagnetic immunity

The SONIC vital 2 is intended for operation in an environment as specified below. The owner or person using the SONIC vital 2 must ensure that the unit is operated in such an environment only.

Immunity testing	IEC 60601 test level	Compliance level	Electromagnetic environment - Guidelines
Static electricity discharges (SED's) in accordance with IEC 61000-4-2	± 6 kV Contact discharge ± 8 kV Air discharge	± 6 kV Contact discharge ± 8 kV Air discharge	Floors must consist of wood, concrete or ceramic tiles. Synthetic flooring requires a relative humidity of at least 30%.
Fast, transient electrical disturbances /bursts in accordance with IEC 61000-4-4	± 2 kV for power lines ± 1 kV for input and output lines	± 2 kV for power lines ± 1 kV for input and output lines	The quality of the supply voltage should correspond to that used in conventional business or hospital environments.
Surges in accordance with IEC 61000-4-5	± 1 kV Normal mode voltage ± 2 kV Common mode voltage	± 1 kV Normal mode voltage ± 2 kV Common mode voltage	The quality of the supply voltage should correspond to that used in conventional business or hospital environments.
Voltage drops, short interruptions and supply voltage variations in accordance with IEC 61000-4-11	< 5 % U_T (> 95 % drop of U_T) for ½ cycle 40 % U_T (60 % drop of U_T) for 5 cycles 70 % U_T (30 % drop of U_T) for 25 cycles < 5 % U_T (> 95 % drop of U_T) for 5 s	0 % U_T for 10 ms 40 % U_T for 100 ms 70 % U_T for 500 ms 0 % U_T for 5 ms	The quality of the supply voltage should correspond to that used in conventional business or hospital environments. If the user requires uninterrupted use of the SONIC vital 2 even in the event of power supply interruptions, we recommend connecting the unit to an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field in accordance with IEC 61000-4-8	3 A/m	3 A/m	Magnetic fields associated with these power frequencies should correspond to those typically found in conventional business and hospital environments.

Guidelines and manufacturer declaration – Electromagnetic immunity

The SONIC vital 2 is intended for operation in an environment as specified below. The owner or person using the SONIC vital 2 must ensure that the unit is operated in such an environment only.

Immunity testing	IEC 60601 test level	Compliance level	Electromagnetic environment - Guidelines
Conducted RF disturbances in accordance with IEC 61000-4-6	3 V eff 150 kHz to 80 MHz	3 V eff	Portable and mobile radio units must be used at no lesser distance from the SONIC vital 2 and its cables than the recommended safety distance calculated in accordance with the equation applicable to the relevant transmitter frequency. Recommended safety distance: $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ for 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ for 800 MHz to 2.5 GHz
Conducted RF disturbances in accordance with IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	P = the nominal output rating of the transmitter in Watt according the information provided by the transmitter manufacturer and d = recommended safety distance in metres [m]. The field intensity of stationary transmitters as determined by an electromagnetic site survey a should be less than the compliance level b in each frequency. Interference may occur in the vicinity of equipment marked with the following symbols:

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and mobile, terrestrial radio equipment, amateur radio stations, AM and FM radio and TV broadcasts cannot be accurately predicted theoretically. In order to assess the electromagnetic environment with regard to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the SONIC vital 2 is used exceeds the above compliance level, the SONIC vital 2 should be monitored in order to verify proper operation. In the event that abnormal performance is observed, additional measures, such as re-orienting or relocating the SONIC vital 2, may be necessary. The field strength should be less than 3 V/m over a frequency range of 150 kHz to 80 MHz.

Recommended safety distances between portable and mobile RF telecommunication equipment and the SONIC vital 2

The SONIC vital 2 is intended for use in the electromagnetic environment specified below. The owner or user of the SONIC vital 2 can help to prevent electromagnetic interference by maintaining the minimum safety distance between portable and mobile RF communications equipment (transmitters) and the SONIC vital 2 – as recommended below, according to the output power of the communications equipment.

Rated nominal transmitter output W	Safety distance according to transmitter frequency m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum nominal output not listed above, the recommended safety distance d can be estimated in metres (m) using the equation applicable to the relevant column, where P is the maximum nominal output rating of the transmitter in Watts (W) according to the information provided by the transmitter manufacturer.

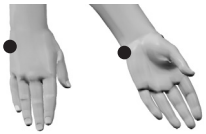
NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

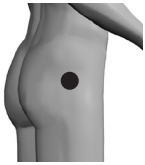
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

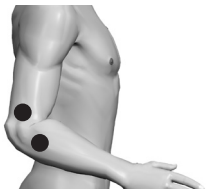
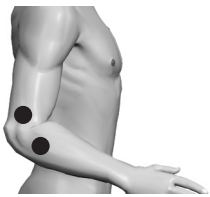
Short Instructions

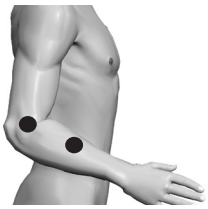
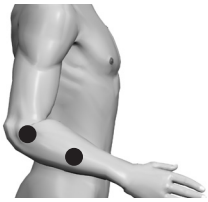
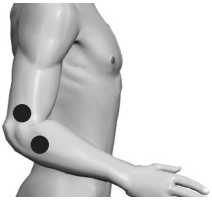
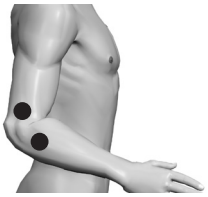
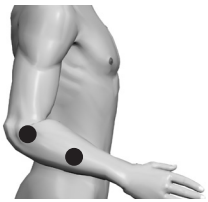
1. Connect the unit to the mains circuit.
2. Connect the ultrasound treatment head(s) to the unit.
3. Turn ON the unit on the front side.
4. Select a program by turning the rotating knob. Confirm your choice by pressing the rotating knob.
5. Select a treatment head by turning the rotating knob. Confirm your choice by pressing the rotating knob.
6. Apply gel on the patient's skin over the treatment area.
7. Start the treatment by increasing the intensity with the rotating knob (clockwise). The intensity is show on the lowest part of the display.

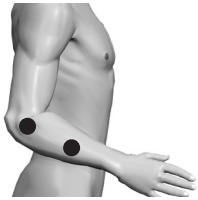
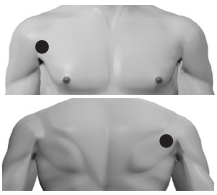
Programs and Indications

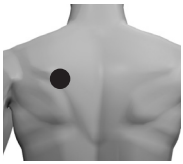
Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
1	rheumatic arthritis interphalangialis	10	3	0.5	3	Every day	mild, no thermal effect Option: underwater treatment	
2	Arthrosis Carpo Ulnaris	100	1	0.5	7	3x week	strong with thermal effect	
3	Arthrosis Cervicalis	100	1	0.5	7	3x week	strong with thermal effect	
4	Bursitis (chronic with calcification)	100	1	1.5	7:30	3x week	strong with thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
5	Scar tissue	100	3	2	1:30 min each cm^2	Every day	strong with thermal effect	
6	Fresh scar tissue	20	3	0.5	1 min each cm^2		mild, no thermical effect	
7	Contracture capsulae of the humeral	100	1	2	7	3x week	strong with thermal effect	
8	Contracture Palmaris dupuytren	100	1	1.5	6	3x week	strong with thermal effect Option: under-water treatment	
9	Coxarthrosis	100	1	1.5	7	3x week	strong with thermal effect	
10	Decubitus	20	3	0.5	1	Every day		
11	Distorsion Genu / Acute	10	1	1	5	Every day	mild, no thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
12	Distorsion Interphalangialis / Acuta	10	3	1	3	Every day	mild, no thermal effect	
13	Distorsion Interphalangialis / Chronica	100	3	1	3	Every day	strong with thermal effect	
14	Distorsion ankle / Acuta	10	3	1	3	Every day	mild, no thermal effect Underwater treatment	
15	Distorsion ankle / Chronica	100	3	1	7	3x week	strong with thermal effect	
16	Epicondylitis Humeri lateralis (type 1) Tennis elbow acute	30	3	0.5	5	Every day	mild, no thermal effect	
17	Epicondylitis Humeri lateralis (type 1) Tennis elbow chronic	100	3	1	7	3x week	strong with thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
18	Epicondylitis Humeri lateralis (type 2) Tennis elbow acute	30	3	0.5	5	Every day	mild, no thermal effect	
19	Epicondylitis Humeri lateralis (type 2) Tennis elbow chronic	100	3	1	7	3x week	strong with thermal effect	
20	Epicondylitis Humeri lateralis (type 3) Tendon m. extensoris carpi radial buttonis brevis/ subacute	30	3	0.5	5	3x week	relatively mild, light thermal effect	
21	Epicondylitis Humeri lateralis (type 3) Tendon m. extensor carpi radial buttonis brevis/ chronic	100	3	1	7	Every day	strong with thermal effect	
22	Epicondylitis Humeri lateralis (type 3) m. extensor carpi radial buttonis brevis/ subacute	30	3	0.5	5	3x week	relatively mild, light thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
23	Epicondylitis Humeri lateralis (type 3) m. carpi radial buttonis brevis / chronic	100	3	1	7	Every day	strong with thermal effect	
24	Fibrosis Fasciae plantaris	100	1	2	6	3x week	strong with thermal effect	
25	Frozen shoulder	100	1	2	15	3x week	strong with thermal effect	
26	Gonarthrosis	100	1	1	7	3x week	strong with thermal effect	
27	Haematoma / chronic	100	3	1	7	3x week	strong with thermal effect	
28	Hernia nuclei pulposis lumbalis	20	1	1.5	5	Every day	relatively mild, light thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
29	Lumbago / acute	20	1	1	5	Every day	mild, no thermal effect	
30	Lumbago / chronic	100	1	1.5	7	3x week	strong with thermal effect	
31	Bechterew disease / general	20	1	1.5	7	3x week	relatively mild, light thermal effect	
32	Bechterew disease / sacro-iliacalis	20	1	1.5	7	3x week	relatively mild, light thermal effect	
33	Burger disease / membrane inferior	100	1	0.3	7	Every day	strong with thermal effect	
34	Burger disease / membrane superior	100	1	0.3	7	Every day	strong with thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
35	Raynaud disease / Membra inferior	100	1	0.3	7	Every day	strong with thermal effect	
36	Raynaud disease / membrane superior	100	1	0.3	7	Every day	strong with thermal effect	
37	Sudeck disease/ membrane inferior	100	1	0.3	7	Every day	strong with thermal effect	
38	Morbus Sudeck / membrane superior	100	1	0.3	7	Every day	strong with thermal effect	
39	Myalgia (ex. M. Vastus Lateralis	20	1	0.5	7	Every day	relatively mild, light thermal effect	
40	Neuropathic pain	100	1	1	5	Every day	strong with thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
41	Phantom pain	100	1	1	5	Every day	strong with thermal effect	
42	Search pain points	100	1	1	no time		strong with thermal effect	
43	Polyarthrosis interphalangialis	100	3	0.5	7	3x week	strong with thermal effect	
44	Screening stress fractures	100	1	1	10		strong with thermal effect	
45	Subluxation shoulder / acute	10	1	1	5	Every day	mild, no thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
46	Subluxation shoulder / chronic	100	1	1	7	3x week	strong with thermal effect	
47	Tendonitis achillis / subacute	30	3	0.5	5	Every day	relatively mild, light thermal effect	
48	Tendonitis achillis / chronic	100	3	0.5	7	3x week	strong with thermal effect	
49	Tendonitis adductorium / subacute	30	3	0.5	5	Every day	relatively mild, light thermal effect	
50	Tendonitis adductorium / chronic	100	3	0.5	7	3x week	strong with thermal effect	
51	Tendonitis m. Infraspinatus / subacute	30	3	0.5	5	Every day	relatively mild, light thermal effect	
52	Tendonitis m. Infraspinatus / chronic	100	3	0.5	7	3x week	strong with thermal effect	
53	Tendonitis patellaris / subacute	30	3	0.5	5	Every day	relatively mild, light thermal effect	

Prog.	Indications	Duty cycle	Frequency MHz	Recommended intensity W/cm²	Treatment time in minutes	Treatment frequency	Remarks	Picture
54	Tendonitis patellaris / chronic	100	3	0.5	7	3x week	strong with thermal effect	
55	Tendonitis m. subscapularis / subacute	30	3	0.5	5	Every day	relatively mild, light thermal effect	
56	Tendonitis m. subscapularis / chronic	100	3	0.5	7	3x week	strong with thermal effect	
57	Tendonitis supraspinatus / subacute	30	3	0.5	5	Every day	relatively mild, light thermal effect	
58	Tendonitis supraspinatus / chronic	100	3	0.5	7	3x week	strong with thermal effect	
59	Carpal tunnel syndrome	100	3	2	6	3x week	relatively mild, light thermal effect	
60	Ulcus Cruris	50	3	0.5	1 min each cm^2 circumference	Every day	mild, no thermal effect	

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